	Application No.	Applicant(s)
Notice of Allowability	10/826,892	VALTCHEV ET AL.
	Examiner	Art Unit	
	Hung T. Vy	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *1/04/2007*.

2. ☒ The allowed claim(s) is/are *10,12-15 and 17-31*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

           International Bureau (PCT Rule 17.2(a)).

     * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

     (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

     (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

     Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 1/09/2006

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *2/5/2007* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

1.   This is a response to Applicant's response filed on 1/04/2007. In virtue of this remarks, claims 10-15, 17-31 remain pending in this application which claims 1-9, and 16 are cancels and the news claims 17-31. Claims 10,12-15 and 17-31 are allowed.

Examiner's Amendment

2.   An examiner's amendment to the record appears below. Should the changes and /or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.3.12. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

3.   The following claim has been amended upon agreement by applicant during a telephone conversation with Mr. Molly S. Damsheuser on 2/05/2007.

      The following claims are the claim's amendments:

1. - 9. (Canceled)

10.   (Currently Amended) A computer-implemented method for applying XML-compatible markup to unstructured textual documents, the method comprising:

      defining an XML schema in accordance with which documents are to be marked up;

      opening a target document in a host Application Programming Interface (API) enabled wordprocessor application ~~capable of storing~~ configured to store XML-compatible non-native markup in documents;

      using an API of the wordprocessor application to parse content included in the target document and to perform element pattern matching to yield inferred XML structure in accordance with the defined XML schema by recognizing instances of designated baseline elements via pattern search and matching and by inferring and constructing higher-level element structure based on the defined XML schema; and

      storing the inferred XML structure within the target document as XML-compatible markup via the API of the wordprocessor application.

11.   (Canceled)

12.   (Previously Presented) A method as recited in claim 10 wherein original visual formatting and textual content of the target document remain intact after storing the inferred XML structure within the target document as XML-compatible markup.

13.   (Previously Presented) A method as recited in claim 10 further comprising limiting XML structure inference and markup creation to a select range or number of select ranges of the target document.

14.   (Previously Presented) A method as recited in claim 10 further comprising creating a structure inference definition for the defined XML schema using a dedicated Graphical User Interface (GUI) integrated in a GUI workspace of the wordprocessor application.

15.   (Currently Amended) A method as recited in claim 10 further comprising presenting a user with a GUI to review ~~probable~~ trouble spots in the target document and to manually correct and complete the automatically generated XML-compatible markup, the ~~probable~~ trouble spots comprising unmarked ranges, missing required elements from the defined XML schema, and inferred XML structure being invalid according to the defined XML schema.

16.   (Canceled)

17.   (Currently Amended) A method as recited in claim 10 wherein opening a target document in a host Application Programming Interface (API) enabled wordprocessor application ~~capable of storing~~ configured to store XML-compatible non-native markup in documents includes opening the target document in a host API enabled wordprocessor application that includes a plug-in ~~capable of storing~~ configured to store XML-compatible markup.

18.   (Previously Presented) A method as recited in claim 10 further comprising:
        identifying a target document type from a set of textual documents with generally consistent inherent logical structure and formatting;

creating a structure inference definition for the target document type comprising a

multiplicity of definitions of baseline elements, the baseline elements being select leaf-level or

near-leaf-level elements from the target document type and having a schema context; and

defining recognition patterns for the baseline elements.

19.   (Previously Presented) A method as recited in claim 18 further comprising invoking a

computer-executable engine to apply the structure inference definition to one or more instances

of the target document type to produce XML structure relating to the defined schema, the

operation of said engine comprising: parsing the one or more instances of the target document

type.

20.   (Previously Presented) A method as recited in claim 19 further comprising defining

patterns and structure inference and construction rules for one or more levels of nested elements

in a designated baseline element, and configuring the computer-executable engine to use said

patterns and rules to produce nested element structure within a text range and the schema context

of a baseline element.

21.   (Previously Presented) A method as recited in claim 19 further comprising:

deriving a state machine having transition labels by recursive aggregation of schema

element content models, starting from a designated root element and moving to the level of

designated baseline elements;

incorporating identities and specific instances of baseline elements in the transition labels

of the state machine; and

configuring the computer-executable engine to compile and use the state machine to

consider a relatively small number of expected baseline elements at a given document position.

22.   (Currently Amended) A method as recited in claim 10 wherein opening a target

document in a host Application Programming Interface (API) enabled wordprocessor application

~~capable of storing~~ <u>configured to store</u> XML-compatible non-native markup in documents

includes detecting the target document in a predefined incoming document folder or receiving

the target document via the API from an external client component.

23.   (Previously Presented) A method as recited in claim 22 wherein using an API of the
wordprocessor application to parse content included in the target document and to perform
element pattern matching to yield inferred XML structure in accordance with the defined XML
schema includes using the API of the wordprocessor application to automatically parse the
content included in the target document and to perform element pattern matching to yield
inferred XML structure in accordance with the defined XML schema after detecting the target
document in a predefined incoming document folder or after receiving the target document via
the API from the external client computer.

24.   (Previously Presented) A method as recited in claim 22 further comprising creating a
structure inference definition for the target document comprising a multiplicity of definitions of
baseline elements, the baseline elements being select leaf-level or near-leaf-level elements from
the second target document and having a schema context and defining recognition patterns for
the baseline elements.

25.   (Currently Amended) A method as recited in claim 10 wherein opening a target
document in a host Application Programming Interface (API) enabled wordprocessor application
~~capable of storing~~ configured to store XML-compatible non-native markup in ~~its documents~~ each
document includes opening multiple target documents.

26.   (Previously Presented) A method as recited in claim 25 wherein using an API of the
wordprocessor application to parse content included in the target document and to perform
element pattern matching to yield inferred XML structure in accordance with the defined XML
schema includes using the API of the wordprocessor application to parse content included in the
multiple target documents sequentially or in parallel in an unattended batch mode.

27.   (Previously Presented) A method as recited in claim 25 further comprising creating a
structure inference definition for the multiple target documents comprising a multiplicity of
definitions of baseline elements, the baseline elements being select leaf-level or near-leaf-level
elements from the multiple documents and having a schema context and defining recognition
patterns for the baseline elements.

28.   (Previously Presented) A method as recited in claim 18 wherein creating a structure
inference definition for the target document type comprising a multiplicity of definitions of
baseline elements, the baseline elements being select leaf-level or near-leaf-level elements from
the target document type and having a schema context includes identifying a baseline element by
a schema path comprising a sequence of one or more XML element or element type steps, a first
one of the one or more XML element or element type steps designating a global schema element
or type and each subsequent step designating a child element or element group of its predecessor.

29.   (Currently Amended) A method as recited in claim 18 further comprising defining the
recognition patterns for the baseline elements to ~~include~~comprise: text patterns selected from the
group of literals, wildcards, and regular expressions; formatting patterns selected from the group
of font style, font name, font size, composite style name, paragraph indentation, and outline
level; and logical compositions of atomic text and formatting patterns and pattern groups.

30.   (Currently Amended) A method as recited in claim 18 further comprising defining the
recognition patterns for the baseline elements to ~~include~~comprise:
        an optional leading pattern, intended to match a document range immediately preceding a
content range of the baseline element, allowing intervening whitespace;
        an optional content pattern, intended to match the content range of the baseline element;
and
        an optional trailing pattern, intended to match a document range immediately following
the content range for the baseline element, allowing intervening whitespace, an end document
position of the trailing pattern element serving as a starting position for matching recognition
patterns of following baseline elements.

31.   (Previously Presented) A method as recited in claim 18 wherein the defining of
recognition patterns for the baseline elements comprises assigning a priority value or pattern
weight value which influences a selection of one baseline element when the recognition patterns
for more than one baseline element yield competing/ambiguous matches at a particular document
position.

Reasons for Allowance

4.   Claims 10,12-15 and 17-31 are allowed.

The following is an examiner's statement of reason for allowance:

With respect to claims 10,12-15 and 17-31, claims 10,12-15 and 17-31 are

considered allowable since the prior made of record and considered pertinent to the

applicant's disclosure does not teach or suggest the claimed limitations. Adler et al.

(U.S. Pub. No. 2004/0205571) or Jones et al. (U.S. Patent No. 7,036,073), taken

individually or in combination, do not teach the claimed invention having a computer-

implemented method for applying XML-compatible markup to unstructured textual

documents, the method comprising, along with all the other claimed feature, defining an

XML schema, opening a target document in host Application Programming Interface

(API) enabled wordprocessor application configured to store XML-compatible

non0antive markup in document; using **an API of the wordprocessor application to**

parse content included in the target document and to perform element **pattern**

matching to yield inferred XML structure in accordance with the defined XML schema

by recognizing instances of **designated baseline elements via pattern search and**

matching and by inferring and constructing higher-level element structure based on the

defined XML schema; and **storing the inferred XML structure within the target**

document as XML-compatible markup via the API of the wordprocessor application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung T. Vy whose telephone number is 571-2721954. The examiner can normally be reached on 8.30am - 5.30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571 272 1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hung T. Vy
Art Unit 2163
February 14, 2007.